Pusztasszabolcs

Pipe Organ Samples

For hauptwerk™ 3

User's Manual

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Made in Hungary.

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1 Welcome

Welcome to the Pusztaszabolcs Pipe Organ Samples!

Pusztaszabolcs (PSZ) Pipe Organ Samples virtual pipe organ is a meticulously sampled recreation of the 1778 Pazicky baroque organ of R. C. St. Imre Pusztaszabolcs, Hungary.

1.1 highlights

Feature highlights of this organ:

- Historical and Extended editions selectable on-the-fly
- Fully functional Combination Action, independent of Hauptwerk™'s combination action, controllable directly from the screen or MIDI.
- Optional tracker and engine noises
- Touch sensitive tracker action noise and pipe transient response
- and more

1.2 Hardware and software requirements

Pusztaszabolcs Pipe Organ Samples is hosted within Hauptwerk™ virtual pipe organ software, available for both PC and Mac computers from Milan Digital Audio, found at http://www.hauptwerk.com on the Internet. Hauptwerk™ functions with both currently available 32-bit and 64-bit operating systems. Hauptwerk™ Advanced Edition is recommended. A high-performance computer is required to experience full, flawless and convenient operation of this library.

1.2.1 RAM and number of loadable stops

Since Hauptwerk™ loads the sample data into the computer's random access memory (RAM) – and does not stream data from the hard disk – the amount of RAM determines the number of stops you can load for playing at a given time. The theoretical RAM limitation, per program instance is 4 GB in 32-bit operating systems; loading all stops of the organ requires a 64-bit operating system, capable of handling more than 4 GB of RAM. Regardless of operating system, please make sure you are using more than 4 GB of RAM.

Hauptwerk™ allows you to load the library with a range of independent options for each available stop, allowing you to trade off the number of loadable stops with varying degrees of realism (you can, for example, choose to load less than the full complement of release samples). Loading all of the stops in their most complete multi-looped versions and with full release samples will consume much more RAM than loading them with, say, single looped data and/or truncated release tails.

Please refer to the Hauptwerk™ User's Manual for a complete description of how to maximize performance with these features.

Hauptwerk™ offers lossless compression for sample loading. We recommend turning this option ON when loading the samples, since it does not affect the quality of sound, but increases the number of stops one can load at a time.

The following table summarizes the loading requirements for the instrument.

Loading setup	RAM requirement
24-bit, all loops, all attack layers, all release samples, memory compression	10.2 GB
16-bit, all loops, all attack layers, all release samples, memory compression	5.4 GB
16-bit, all loops, first attack layers, all release samples, memory compression	3.6 GB
16-bit, first loops, all attack layers, all release samples, memory compression	3.1 GB
16-bit, first loops, first attack layers, all release samples, memory compression	2.4 GB
16-bit, first loops, first attack layers, 250 ms simulated dry, memory compression	1.0 GB

1.2.2 CPU and Polyphony

It is essential that your computer has a high-performance CPU in order to experience full polyphony. A high polyphony capability is required when many stops are drawn and many notes played together.

Note: Polyphony is defined as the number of stops being selected, times the number of notes held per stop, including the duration release tails to sound, at any given time.

A series of fast staccato chords in Tutti will stress your computer the most, because the initial release tails will continue to sound as additional staccato chords are being played. For the most flawless operation, we recommend the use of a 4-core CPU or better, equipped with the most RAM that you can afford. As your CPU power increases, you can achieve more polyphony.

Please refer to the Hauptwerk™ User's Manual for a complete description of how to achieve maximum polyphony with your computer.

2 Installation

Installing the Pusztaszabolcs Pipe Organ Samples requires that you own a registered, installed copy of Hauptwerk™ virtual pipe organ software, together with a registered, working USB key (dongle). Please do not attempt to install the Pusztaszabolcs library unless you have a registered copy of Hauptwerk™ installed in your computer.

This installation procedure is for Hauptwerk™ version 3.21. If using a later version of Hauptwerk™, the required steps may be slightly different in detail; please refer to your version's copy of the Hauptwerk™ User Guide.

1. Download or insert the installation medium to your computer.
2. Launch Hauptwerk™ virtual organ software in the "standalone" mode.
3. From within Hauptwerk™, go to the file menu and select *Install organ, sample set, temperament or impulse response*
    a. The program will prompt you to select the program to install.
    b. Navigate to the USB stick to select the first file set to install. All of the available file sets should be installed in order to make the library work.
    c. Click 'Open' and then click 'OK' on the next screen.
    d. Wait until Hauptwerk™ finishes installing the file you have selected.
4. Repeat Step 3 until all files have been installed from the installation medium.

2.1 Controls of the virtual pipe organ

The organ at the R.C. St. Imre of Pusztaszabolcs has one console, and has fully mechanical action.

2.2 Pages

The organ controls are organized into so-called "Pages" in Hauptwerk™ to allow convenient operation. Each page of this virtual instrument plays a different role, and allows you to control and monitor the organ's numerous features in a convenient way. The following table summarizes the contents of each page.

Page name	Description / Type	What is it for?
Console	Overview of the organ console.	Check, control, observe and demonstrate everything on one screen, including drawbar stop, keyboard and pedal movements.
Center	All drawbar knobs on one page. Historical view.	For systems with a single touch display screen, this page allows you to control all stops from a single page.
Left	Left drawbar stops.	For systems with two individual touch screens, you can place this screen to the left of the keyboard, to control the left bank of stops, just as on the real instrument.
Right	Right drawbar stops.	For systems with two individual touch screens, you can place this second screen to the right of the keyboard, to control the right bank of stops, just as on the real instrument.
Ext	All drawbar knobs on one page. Extended view.	This page is similar to the Center page, but the stops are reorganized for more convenience and the additional buttons are permanently visible allowing you to use these features in the Historical Mode as well.
Advanced	Advanced controls	Advanced controls such as the Mode selection, the Compass selection and the Wind Stability control.

Note: To respect the historical look of the organ console, additional console features, left and right pages – such as the tracker, the engine or the combination action buttons – are visible only when the **Extended Mode** is activated.

2.3 Modes

The virtual version of the Pusztaszabolcs pipe organ has two operational modes: the **Historical Mode** and the **Extended Mode**. You can select either of these modes at any time using the 'Advanced' Page.

2.3.1 historical Mode

The Historical Mode features the original controls and features of the Pusztaszabolcs pipe organ.

2.3.2 Extended Mode

The Extended Mode extends the number of keys of the pipe organ (the *compass* of the pipe organ) to 54 manual keys and 30 pedal keys to allow the performance of an even wider range of baroque pieces.

Furthermore, the Extended Mode summons a virtual combination action onto the organ console (and to the 'Left' and 'Right' pages).

2.4 keys and keyboards

The virtual instrument boasts the Pusztaszabolcs's two 45-note manuals and a 15-note set of pedals. All keys and keyboards are shown in a photo-realistic perspective view, fully responsive to mouse control. The manuals and pedal keyboard all faithfully mirror your performance.

2.4.1 Short octave

Some historical instruments, such as the Pusztaszabolcs organ are built with a lower short octave. This means that some keys produce different sounds than in other octaves. The following pictures show the two types of historical key responses.

Historical Mode

historical key response

(original)

Historical Mode

full key response

(MIDI-compatible)

The same short octave response applies to the pedal keys as well.

In the Extended Mode the keys are fully functional and responsive according to the MIDI keys. This is achieved by electronically re-creating the notes that were missing, based on the available notes.

2.5 Stops

The organ console features drawbar stops, which you can click to activate. All drawbar knobs are animated and their on/off status will be synchronized on all pages.

Labels above each drawbar show the historical name of the stop. Since the drawbars are animated in full perspective, please make sure to touch or click on their dark wooden part to make them move.

2.6 Buttons

Many features of this sample set can be controlled using buttons, as described below.

2.6.1 Optional Noises | M, T

The Motor (M) and the Tracker Action (T) noise buttons are buttons that will optionally turn on the organ motor noise and the velocity-responsive tracker action noise, respectively. For those seeking ultimate realism, just turn both of these on!

Note: Even if the T button is turned off, the pipes remain velocity responsive.

2.6.2 All stops off button | o

The Zero or general cancel button turns all stops and the coupler off. In Pusztaszabolcs Pipe Organ Samples it is marked with a zero (0) sign.

2.7 Combination Action

The Combination Action of the Pusztaszabolcs Pipe Organ Samples is the same unique combination action that was introduced first by the Palace of Arts Budapest Pipe Organ Samples. You can control different sets of stops (combinations) stored in the organ's internal memory by a single click or touch, uniquely *right from the graphical interface*.

This feature is independent of Hauptwerk's™ own combination action system, allowing more convenient use and the possibility to register the virtual organ's stop list in exactly the same way as on a real organ.

The key element of Pusztaszabolcs's Combination action is the "Increment" and "Decrement" button array, clearly marked with left- and right-facing triangles.

Combination action is used to access presets of different stop configurations with a single click, an essential feature when performing organ pieces in real time.

2.7.1 Features

Pusztaszabolcs Pipe Organ Samples is capable of storing 8 combinations within its internal memory. You can save and load these into a single file by using Hauptwerk™'s built-in Save and Load functionality in the Combinations menu (as of Hauptwerk™ Version 3.21).

The Combination Action, or "Setzer" in its Germanic name, is accessed and controlled by a group of dedicated buttons. Eight numerical buttons (numbered 1 - 8) can directly access the memory positions, and are also used in conjunction with the arrow-like triangles buttons, permitting rapid navigation within the combination memory.

2.7.2 Programming and resetting

Once you define a stop configuration on the console that you wish to save as a combination preset (also called a "frame"), press the S button once, and then press either a number or a navigation key to select which combination frame you want to program. If you select the same number that was previously active, the previous combination will be overwritten with the new one.

Hint: The easiest way to program a particular stop combination into the next frame is to press the S set button and then press the increment button. This will program the currently set configuration to the next frame and increment the current frame by one to that frame – with a single click.

You can also assign MIDI messages to these buttons so that, if you have a MIDI-capable console, all these functionalities can be directly available to you in physical form as well.

Saving entire banks of combinations is just as easy as saving Hauptwerk's™ own combinations, and can be configured using the same commands.

3 The Pazicky organ of Pusztaszabolcs

3.1 Short history[1]

The history of the organ dates back to the turn of the 17th - 18th century, at which time the organ resided in the 1717 Franciscan Saint Anna church at Esztergom, in northern Hungary. The organ's builder and the date of its construction are still unknown, but according to recent research it was most likely completed before year 1739. The first verifiable state of the organ, in the Franciscan church, describes it as unpainted, with 9 stops on one single manual (keyboard) and a pedal board, both operated in the back of the organ case. There were no couplers. The wind supply was provided by two wedge-blowers. Its tuning might have been one half-tone higher than customary today, but was subsequently altered.

The first paintings appeared on the organ at the same time as the altar of the church was painted. Unique in Hungary the paintings depict scenes of nature on the removable back and side doors.

Since the organ was too small for the church, it was extended in 1778 by Jan Pazický (spelled Pazsiczky at that times), who would go on to found an organ building dynasty with a 120 year tradition. Pazicky extended the organ with a second manual and a new positive work, added 2 more stops to the pedal and a larger blower. This resulted in a 2+P, 17 (18) stop instrument.

After a few decades, the organ case was entirely painted to oil green. Later on, in 1884, the organ was again re-painted – this time to brown, the pipe-work for the two manual were physically separated and a new console was built in between them. In 1892 a new blower was installed, and in 1918 the tin pipes of the façade were collected to support the war. In 1925 these pipes were rebuilt made of zinc. Meanwhile, the pipes of the short octave were cropped to support chromactic scale on the lower octave, and the organ case was painted white. In 1941 the Franciscans decided to build a new pipe organ, resulting in the sale of the instrument to the city of Pusztaszabolcs through a newspaper advertisement for the sum of 3000 pengő.

Background: Pengő was the currency of Hungary between 1926 and 1946, following the split of the Austro-Hungarian Empire after World War I when all

[1] based on *http://www.barokkorgona.hu/index.php?id=7&L=2* and other sources

countries had to develop, design and manufacture their own new currencies. According to the 1941 currency exchange rates, 3000 pengős was equal to approximately 216 British pounds, 4420 French franks or 900 dollars.

Tarttinger János, organ maker of Érsekújvár completed the dismantling, transportation, and construction of the newly acquired organ. Installation was completed shortly before the Second World War. By the early fifties the instrument was in a badly deteriorated state, so the church decided to fully replace all internal parts, however, the appointed repairman had vanished with the (prepaid) money collected for this purpose. Ironically this worked to the organ's advantage – saving it from ill-advised tampering, if only on a temporary basis. It was not until the beginning of the nineties that the organ was recognized again; several studies and plans were undertaken on how best to restore the instrument. The pipe organ programme of the office of the National Cultural Heritage, which in 2003 declared the organ as a Historical Relic, finally allowed commencement of the restoration.

About 90 percent of the pipes, the mechanics and the 18th century status of the organ case – although repainted several times – remained.

The main objective of the reconstruction was to restore the state of the 1778 Pazicky baroque instrument.

On 15 April 2002, the reconstruction of the organ was begun. The organ case was reinforced and the pipes of the positive work were relocated further to the rear. To achieve an acoustically better condition and to better replicate the conditions of its original environment in Esztergom, the organ loft was extended slightly during the reconstruction and the finally reconstructed organ case was installed there. The paintings of the organ case remained in a relatively good condition, needing only slight retouching after the removal of the previously painted layers. The organ builder reconstructed the blowers, the bellows, the mechanics and the keyboards according to documents of the original state and examples of other Pazickzy organs in the region found following extensive research by the restoration experts. Organs referenced were the R.C. Church in Poroszka, (Pruské, in Slovakia) and an instrument (maker unknown) in a Franciscan church in Bacs (Bac, in Slovakia).

The façade pipes of the positive work are the original Pazicky pipes, while the zinc façade pipes of the great organ were replaced with appropriately designed new ones made of 70% tin alloy. Some of them received decorative embossing, according to the customs of Upper Hungary. The second row of pipes (planned but never built by Pazicky) of the Mixtura stop was also added during the reconstruction according to the original mensur (scale of pipes).

From remaining parts the blower housing behind the organ and two new edge-blowers with manually operable pedals were also restored, so the instrument now can be operated with or without an organ engine. Based on experiments the wind pressure was set at 65 mm. The tuning of the organ is based at 448 Hz (25 ºC), in Werckmeister III.

The instrument is now in its original splendor, faithfully reconstructed to its 1778 Pazicky state. Today this instrument is the oldest and most completely conserved pipe organ in Hungary.

The restoration was conducted by the Varga Orgonaépítő Kft supervised by master organ builder László Varga. Advising experts were Bertalan Hock and Péter Sirák; the organ case was reconstructed by Rezső Schwartz, and pictures by Ildikó Jeszeniczky and Edit Perjés restoration artists.

3.2 Disposition

II. Manual (Great organ, 45 notes ~1700-1739)

- Principal (8')
- Copula maior (8')
- Octav (4')
- Copula minor (4')
- Quinta (2 2/3')
- Sedecima (2')
- Quint minor (1 1/3')
- Mixtura (2x1')

I. Manual (positive, 45 notes, 1778)

- Coppel (8')
- Quintadena (8')
- Flauta minor (4')
- Principal (4')
- Octave (2')
- Super octave (1')

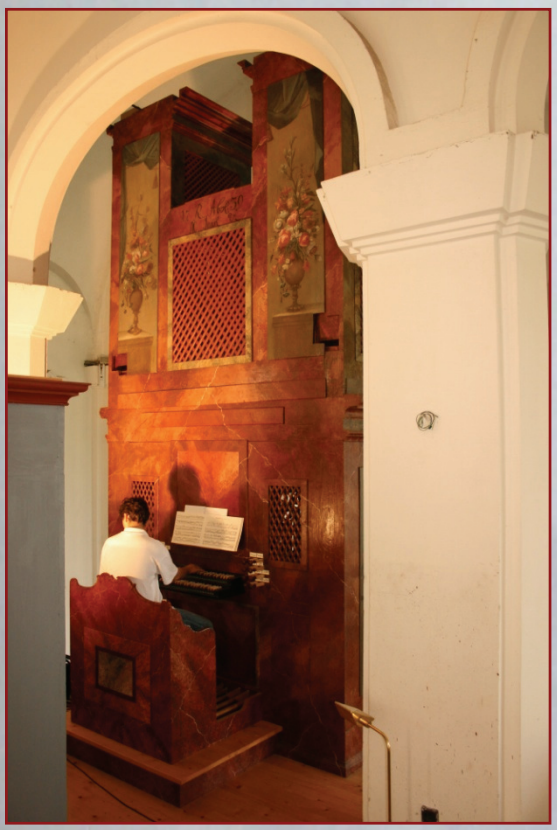
Pedal (18 notes)

- Petal (Subbass 16' + Burdon 8')
- Octav bass (8', ~1778)
- Flauta bass (4', ~1778)

Copula clavıaturae (II+I, 1778)

4 The recording

The recording was conducted in a continuous 24-hour recording session on 26-27 June, 2008. All samples were recorded at 192 kHz and acoustic measurements were also conducted. Many photographs to support the modeling of the virtual console were also made. During the recordings some extremely noisy conditions were experienced due to a nearby air conditioning unit (with a size of an entire room) which occasionally started to operate.



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Thank you

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This virtual pipe organ financially supports the original instrument.